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Subject: BOE Call - Improvements to Discuss
Date: Wednesday, February 27, 2019 2:32:07 PM

Sara and Susan,

We look forward to our call today. We would also like to discuss the recent improvements that will further reduce the digester releases. Improvements to the wastewater treatment system operation in the last ten days have resulted in greatly improved solid separation which directly improves plant stability. As you know, the plant historically discharged significant total suspended solid ("TSS") loads to the SC WWTP, up to 60,000 lbs per day. The plant has been working to reduce TSS discharges and commissioned Waste Management to develop and optimize TSS removal processes. Waste Management performed a complete review and revised operations. The improvements have reduced TSS discharges to below 10,000 lbs/day with frequent periods less than 2,000 lbs/day.

This TSS treatment improvement has tremendously improved plant integrity, including reducing the likelihood of digester gas release through the pressure relief valves (PRVs). Throughout the last year, TSS build up resulted in elevated digester levels of about 20.5 feet. The digesters are designed to operate at 18.5. This reduced digester level re-claims the head space through which generated gas travels to the clean-up skid or flare.

At the previously elevated levels, any surge or increase in load was more likely to plug the gas flow path through the head space with even moderate elevations. This left the PRV as the only gas release point. At the current, lower digester levels, the headspace is not only larger but also more tolerant to surges. Indeed, with these changes the plant is now producing 35% more pipeline-ready biogas per day.

Further, because the solids are now effectively removed (rather than recycled), the overall throughput is much lower achieving a much longer hydraulic residence time (HRT).

Best,
Bill

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